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10/539,882	03/15/2006	Katsuhiko Mori	00862.023367.	6475

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EXAMINER
CHAWAN, SHEELA C

ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 June 2005*.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *1-31* is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on *16 June 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☒ All   b)☐ Some *   c)☐ None of:
      1.☒ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date *9/12/08*.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____ .

DETAILED ACTION

Priority

1.   Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which

papers have been placed of record in the file.

Preliminary Amendment

2.   Preliminary amendment filed on 6/16/05 has been entered.

Information Disclosure Statement

3.   The information disclosure statement (IDS) submitted on 9/12/08, the information

disclosure statement is being considered by the examiner.

Drawings

4.   The Examiner has approved drawings filed on 6/16/05.

Claim Rejections - 35 USC § 101

5.   35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
conditions and requirements of this title.

        Claims 1-28 are rejected under 35 U.S.C. 101 as not falling within one of the four

statutory categories of invention. While the claims recite a series of steps or acts to be

performed, a statutory "process" under 35 U.S.C. 101 must (1) be tied to another

statutory category (such as a particular apparatus), or (2) transform underlying subject

matter (such as an article or material) to a different state or thing (See the May 15, 2008

memorandum issued by Deputy Commissioner for Patent Examining Policy, John J.

Love, titled "Clarification of 'Processes' under 35 U.S.C. 101"- publicly available on the

PTO website httpllwww.uspto.govlweblofficeslpacldapplopallpreognoticel, section_101

05 15 2008.pdf, "memorandum to examining corp"). The instant claims neither

transform underlying subject matter nor positively tie to another statutory category that

accomplishes the claimed method steps, and therefore do not qualify as a statutory

process.   In order for a process to be "tied" to another statutory category, the structure

of another statutory category should be positively recited in a step or steps significant to

the basic inventive concept, and NOT just in association with statements of intended

use or purpose, insignificant pre or post solution activity, or implicitly.

Claim Rejections - 35 USC § 101

6.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
> conditions and requirements of this title.

Claim 31 is rejected under 35 U.S.C. 101 because the claimed invention is

directed to non-statutory subject matter as follows. Claim 35 defines "A computer

readable pattern identification program". However, the claim does not define a

computer-readable medium or memory and is thus non-statutory for that reason (i.e.,

"When functional descriptive material is recorded on some computer-readable medium

it becomes structurally and functionally interrelated to the medium and will be statutory

in most cases since use of technology permits the function of the descriptive material to

be realized" – Guidelines Annex IV). That is, the scope of the presently claimed can

range from paper on which the program is written, to a program simply contemplated

and memorized by a person. The examiner suggests amending the claim to embody

the program on "computer-readable medium" or equivalent in order to make the claim

statutory. Any amendment to the claim should be commensurate with its

corresponding disclosure.

Claim Rejections - 35 USC § 102

7.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under

section 122(b), by another filed in the United States before the invention by the

applicant for patent or (2) a patent granted on an application for patent by another filed

in the United States before the invention by the applicant for patent, except that an

international application filed under the treaty defined in section 351(a) shall have the

effects for purposes of this subsection of an application filed in the United States only if

the international application designated the United States and was published under

Article 21(2) of such treaty in the English language.

Claims 1-8, 10-31, are rejected under 35 U.S.C. 102(e) as being anticipated by

Mori et al., (US. 7,039,233 B2).

As to claim 1, Mori discloses a pattern identification method for hierarchically

extracting features of input data, and identifying a pattern of the input data,

characterized by comprising:

a first feature extraction step of extracting features of a first layer (note, in column 7, lines 11- 23, at the beginning the extraction of first feature, is explained starting with detection and then followed by extraction of first feature (integration). First paragraph and second paragraph give the steps in the processing sequence of first feature);

a determination step of determining a method of extracting features of a second layer higher than the first layer on the basis of feature extraction results in the first feature extraction step (note, the second feature extraction is explained in the column 7, lines 25- 29, succeeding feature detection and integration (extraction); and

a second feature extraction step of extracting features of the second layer on the basis of the method determined in the determination step(note, the second feature extraction is explained in the column 7, lines 25- 29, succeeding feature detection and integration (extraction).

As to claim 2, Mori discloses the method according to claim 1, characterized in that the determination step includes a step of analyzing a distribution of feature extraction results in the first feature extraction step, and determining the method based on the analyzed distribution (fig 3 shows the steps in the detection and integration of features (primary, secondary and tertiary, column 9, lines 27- 64, explains the analysis of extraction results based on the data sharing with the detection process parts and also explaining the step in the control output and detection memory).

As to claim 3, Mori discloses the method according to claim 2, characterized in that the determination step includes a step of calculating likelihood values of a plurality of features of the second layer on the basis of the distribution, and determining features

which have the calculated likelihood values not less than a predetermined value as objects to be extracted (column 7, lines 24- 37, explains the calculating of plurality of values for second layer features, the detection determination value based is based on the values in the memory which are shown in (fig 3, S303) used for comparing the input values).

As to claim 4, Mori discloses the method according to claim 1 characterized in that the first or second feature extraction step includes a step of extracting features obtained by applying predetermined conversions to a predetermined feature (column 8, lines 23- 39, explains the process of the step of extracting by applying predetermined conversion (fig 5) to predetermined features).

As to claim 5, Mori discloses the method according to claim 1, characterized by further comprising a re-extraction step of re-extracting features of a lower layer on the basis of the feature extraction results of an upper layer in the second feature extraction step (column 9, lines 37- 47, (also fig 2, column 2, lines fig 3, item S304 explains the use of primary feature data to extract secondary features).

As to claim 6, Mori discloses the method according to claim I, characterized in that the determination step includes a step of analyzing distributions of the plurality of feature extraction results, and analyzing a relative relationship among the individual analysis results (column 8, lines 48- 55, relative relation ship among individual analysis is shown for each layer of data example is clearly mentioned in column 8, lines 48- 55).

As to claim 7, Mori discloses the method according to claim 1, characterized in that the determination step includes a step of analyzing a distribution of at least one

feature extraction result within a specific range (column 8, lines 40- 47, the analysis of distinction within a specific range is explained).

As to claim 8, Mori discloses the method according to claim 1, characterized in that the determination step includes a step of analyzing if the feature is extracted or not extracted within a predetermined range in a distribution of at least one feature extraction result (column 7, lines 11-18, explains the analysis of feature extraction result).

As to claim 10, Mori discloses the method according to claim 1, characterized in that the determination step includes a step of analyzing a size of a range from which the feature is extracted or not extracted in a distribution of at least one feature extraction result (column 7, lines 29- 37, averaging is a step which follows the determination of low and values or a range of values).

As to claim 11, Mori discloses the method according to claim 1, characterized in that the determination step includes a step of analyzing a sum total of likelihood values or feature detection levels of at least one feature extraction result (column 7, lines 29- 33, receives outputs of cell elements total of likelihood values).

As to claim 12, Mori discloses the method according to claim 1, characterized in that the second feature extraction 15 step includes a step of extracting features by setting a model, and the determination step includes a step of determining a model to be set in the second feature extraction step (column 7, lines 24-29, extraction of second feature column 12, lines 45- 50, determining (detecting) step is arranged in hierarchic processing sequence which is otherwise a sequential processing methods).

As to claim 13, Mori discloses the method according to claim 12, characterized in that the first feature extraction step includes a step of extracting features by setting models, and a model used in the second feature extraction step is formed by combining predetermined models used in the first feature extraction step, the first detection step includes a step of calculating feature amounts of the models with respect to forming parts of the pattern by comparing the models used in the first detection step and the forming parts of the pattern, and the determination step includes a step of determining a specific model to be a model to be set on the basis of feature amounts of models which form the specific model (column 7, lines 5-10, model could be image pattern entered and various center position around a predetermined sampling prints, column 7, lines 1-23 parts of a pattern predetermined sampling points , column 8, lines 1-10, column 8, line 6, reads local data around a certain center points these describe data is used in the detection of primary features (specific model).

As to claim 14, Mori discloses the method according to claim 13, characterized in that the determination step includes a step of determining, when all the models which form the specific model have a predetermined feature amount, the specific model as the model to be set (column 8, lines 23-39, The process includes the predetermined quantitative data for each feature, column 8, line 36).

As to claim 15, Mori discloses the method according to claim 12, characterized in that the determination step includes a 15 step of determining a plurality of models which are   formed by rotating an identical model at a plurality of angles as models set to be set (fig 4, primary feature , column 4, lines 1-4, column 9, lines 40- 46).

As to claim 16, Mori discloses the method according to claim 12, characterized in that the determination step includes a step of limiting the number of models to be set on the basis of feature amounts calculated for the models (column 5, lines 7-12 37- 39, the detection process control signals (number of models) are controlled (set) in synchronization to retain the data).

As to claim 17, Mori discloses the method according to claim 15, characterized in that the determination step includes a step of selecting rotation angles of low-order models having feature amounts not less than a predetermined amount of the calculated feature amounts of the low-order models, and determining high-order models corresponding to the selected rotation angles as the models to be set (fig 4, column 4, lines 1-3, are set as selected angles these could be same as described in the application . The angles could vary according to the need, column 7, lines 47- 62).

Regarding claim 18, it is interpreted and thus rejected for the same reasons as applied above in the rejection of claim 17.

Regarding claim 19, it is interpreted and thus rejected for the same reasons as applied above in the rejection of claim 17 and 18.

Regarding claim 20, it is interpreted and thus rejected for the same reasons as applied above in the rejection of claim 17, 18 and 19.

As to claim 21, Mori discloses the method according to claim 13, characterized in that a predetermined reference model 25 is held, and the determination step includes a step of determining a model obtained by converting the reference model using the

calculated feature amount as a model to be set (column 7, lines 1-10, 11-21, here the model feature values (reference) are used in integration of feature values).

As to claim 22, Mori discloses the method according to claim 1, characterized in that predetermined reference data is held, and the determination step includes a step of determining data used in the second feature extraction step on the basis of the reference data and feature extraction results in the first feature extraction step (note, the extraction of primary (first) feature is used as a bases for extraction of second feature extraction (fig 3, item 302 and 304, column 8, lines 1-4, column 9, lines 37- 38, secondary feature detection is sequential to primary feature).

As to claim 23, Mori discloses the method according to claim 22, characterized in that the determination step includes a step of determining data to be used at each spatial position of an input signal (column 9, lines 37- 47, the detection (determination) step is based on the positional relationship (spatial position data).

As to claim 24, Mori, discloses the method according to claim 22, characterized in that the reference data is data used to detect a plurality of features which form a typical pattern of the predetermined pattern, the determination step includes a step of converting the held reference data on the basis of a positional relationship between the plurality of features extracted in the first feature extraction step, and the second feature extraction step includes a step of determining a presence/absence of the predetermined pattern included in the input signal on the basis of correlation between the converted reference data and the input signal (column 7, lines 5-10, the integrating memory

retains the values of plurality of features , column 9, lines 47- 64, the reference data

(primary feature) is used as a basis for the determination of secondary features).

As to claim 25, Mori discloses a pattern identification method characterized in

that the determination step includes a step of determining a size of an input range from

a detection result of a previous layer used in feature detection in the first feature

extraction step on the basis of the feature extraction results in the first feature extraction

step (column 9, lines 45- 47, the determination step includes the previous step data

(also see figure 3, item 302, 304 and 306).

Regarding claim 26, it is interpreted and thus rejected for the same reasons as

applied above in the rejection of claim 23.

As to claim 27, Mori discloses the method according to claim 1, characterized by

further comprising:

a result holding step of holding the feature extraction results in the first feature

extraction step (fig 1A, elements 1011, 1012 and 1013, hold the feature extraction

results , column 3, lines 63- 64, column 4, lines 12-45, explains the feature of holding

feature of extraction results);

a parameter acquisition step of obtaining a parameter on the basis of the

detection results held in the result holding step (column 8, lines 56- 65, explains the

parameter acquisition process); and

a change step of changing the feature detection results to be read out in the

second feature extraction step on the basis of the parameter obtained in the parameter

acquisition step(column 9, lines 37- 47, the detection (determination) step is based on the positional relationship (spatial position data).

As to claim 28, Mori discloses the method according to claim 1, characterized in that the input data is an image, and each of the first and second feature extraction steps includes a step of extracting features which form a face (column 7, lines 47-62, refers to the eye pattern recognition which implies the image would be face).

As to claim 29, Mori discloses a pattern identification device for hierarchically extracting features of input data, and identifying a pattern of the input data, characterized by comprising:

first feature extraction (note, image acquiring through image pickup apparatus with an image optical system camera, or ccd or CMOS sensor a measurement unit for image pickup parameters) means for extracting features of a first layer (column 7, lines 11- 23, first feature extraction program steps column 11, lines 56-67, fig 12);

determination means for determining a method of extracting features of a second layer higher than the first layer on the basis of feature extraction results in the first feature extraction means (column 7, lines 1-67, explains the process of extracting features primary and secondary with associated requirements); and

second feature extraction means for extracting features of the second layer on the basis of the method determined by said determination means (column 7, lines 1-67, explains the process of extracting features primary and secondary with associated requirements).

Regarding claim 30, it is interpreted and thus rejected for the same reasons as applied above in the rejection of claim 29.

Regarding claim 31, it is interpreted and thus rejected for the same reasons as applied above in the rejection of claim 29.

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mori et al. (US.7,039,233 B2), as applied to the claims 1-8, 10-31 above and further in view of Badique (US. 5,570,434).

Mori discloses a pattern recognition apparatus for executing pattern recognition, detection of a specified object by parallel operation of a neural network.

Mori is silent about determination step includes a step of analyzing a barycentric position of a distribution of at least one feature extraction result.

Badique discloses circuit arrangement for recognizing a human face. The system comprises of:

characterized in that the determination step includes a step of analyzing a barycentric position of a distribution of at least one feature extraction result (see col. 9, line 63 - col. 10, line 4).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Mori to include characterized in that the determination step includes a step of analyzing a barycentric position of a distribution of at least one feature extraction result . It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Mori by the teaching of Badique to utilize a barycenter of a distribution of the features for the benefit of enabling the recognition of the mouth and eyes (as suggested by Badique at column 2, lines 49-51).

Contact Information

9.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Sheela C Chawan whose telephone number is. 571-

272-7446. The examiner can normally be reached on Monday - Thursday 7.30 - 6.00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Brian Werner can be reached on 571-272-7401. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-

8300. Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR

only. For more information about the PAIR system, see http://pair-direct.uspto.gov.

Should you have questions on access to the Private PAIR system, contact the

Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Sheela C Chawan/

11/21/08

Primary Examiner, Art Unit 2624